



THE NATIONAL CENTER ON
Quality Teaching
and Learning



Teacher Time
Webinars for Head Start Preschool Teachers

FOLLOW-UP LEARNING BY BUILDING: ENGINEERING FOR PRESCHOOL CHILDREN

FRIDAY, FEB. 13, 2015

Thank You!

We're so glad you were able to join us for another Teacher Time. Let's continue to learn from each other! Send your ideas, questions, and strategies to ncqtl@uw.edu and we'll include them on Teacher Time.

Looking Ahead

Don't miss the next Teacher Time, **Friday, March 13, 3 p.m. EDT (noon PDT)**, for **Art and Storybooks: Ideas from STEAM**.

Presentation Summary

This month we covered engineering in the preschool classroom. We talked about what engineering typically looks like, the developmental stages of block play, and the design engineering process.

The design engineering process is a structured series of steps that focus on reaching a solution to a problem. See the attached handout for more details.

The developmental stages of block play:

1. Child uses one block to represent an object (such as a dog, or a phone).
2. Child stacks several blocks in a simple tower (and then knocks it down!).
3. Child connects blocks horizontally on the floor (to make a road or a train).
4. Child combines blocks into a pile that does not have an interior space.
5. Child then creates more complex structures with a floor, walls, a roof, and an interior open space.

Try It Out

These activities bring engineering into your classroom.

Creation Station — Place a selection of found objects in a station (cardboard, tape, plastic bottle caps and lids, craft sticks, cotton balls, scratch paper, etc.). Encourage children to build whatever they can with the materials.

Challenge it! — Use a variety of building materials to offer children a set of challenges.

- How tall can you make it?
- Build a tunnel you can crawl through.
- Build something as a team.
- Build something in five minutes.
- Un-build. Slowly take apart a tower until it tumbles down.

Coding — There are many types of engineering; computer engineering is one type. Here's a fun way to introduce the concepts of basic coding to preschool children.

1. Have one child be the "programmer." This child's job is to direct their "computer" partner to move one step at a time.
2. Use three basic moves: forward, turn right, and turn left.
3. The programmer directs the computer partner to take a step, wait for the next direction, take another step, etc. (The programmer can use arm gestures or a large arrow.)

Movement and Machines — There are a number of activities that focus on movement and machines. One idea is to explore how things move, such as rolling balls, spinning tops, and ramps. Here's an example of the STEAM planning form filled out for that activity.

STEAM PLANNING FORM

Activity	Learning objectives	HSCDEL domains	Teaching strategies	Assessment	STEAM area	Scientific skills generated
How Things Move!	Compare how things move	Science and Approaches to Learning	Ask question	Review work samples—photos	Engineering, Science, Math, Art	Understand forces of motion

Resources

STEM Sprouts Teaching Guide from the Boston Children's Museum

<http://www.bostonchildrensmuseum.org/sites/default/files/pdfs/STEMGuide.pdf>

Code.org is a free website that introduces basic coding skills.

www.code.org

15-minute In-service Suite: Scaffolding Children's Learning

<http://eclkc.ohs.acf.hhs.gov/hslc/tta-system/teaching/practice/engage/iss/scaffolding.html>

Behavior Management Minute

Strategies to support block play:

- Provide social instructions as well as activity instructions.
- Use problem-solving cue cards.
- Prevent children from building in high traffic areas by creating a barrier.
- Provide children with their own trays or box lids to build in. This will help them remember which materials are theirs (and keep those marbles from getting away!).

Resiliency & Wellness

Here's one way to take some time for ourselves—to check in and see how we feel things are going.

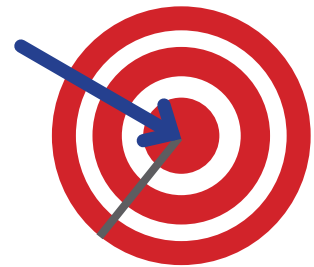
Create a Values Action Plan

Clarify your values in four aspects of your life:

1. Work and Education
2. Personal Growth and Health
3. Relationships and Family
4. Leisure

Assess how “on target” your daily actions are to your values.

If you are off target, list one daily action you can take to move closer to your values.



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For more information, contact us at: NCQTL@UW.EDU or 877-731-0764

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